WHAT IS CLAIMED IS:

1. A method for modeling an implant to be applied to a defect of a bone, the defect having side walls, comprising the steps of:

obtaining a plurality of tomographic image data of the bone based on measurement data by MRI;

producing three-dimensional image data of the bone based on the plurality of tomographic image data; and

estimating a shape of a missing born that was previously present or should have been present in the defect of the bone to obtain three-dimensional data of the implant, wherein the three-dimensional data of the implant is modeled such that at least a part of the outer periphery of the implant is conformable with the shape of the side walls of the defect of the bone.

2. The method as claimed in claim 1, wherein the tomographic image data is obtained by obtaining threshold value inverting data by inverting a threshold value of the measurement data by MRI, and then extracting a born region from the threshold value inverting data.

3. The method as claimed in claim 1, wherein the estimating step comprises the steps of:

estimating a provisional shape of the implant which has

a contour conformable with the shape of a contour of periphery of the side walls of the defect at the distal surface of the bone and has a predetermined thickness; and

deleting data of portions of the provisional shape of the implant that overlap the bone from the data of the provisional shape of the implant so that the three-dimensional data of the implant has an outer peripheral shape that is conformable with the shape of the side walls of the defect.

4. The method as claimed in claim 1, wherein the estimating step comprises the steps of:

producing data of a contour of a distal surface of the implant so that the contour is conformable with the shape of a contour of periphery of the side walls at the distal surface of the bone;

estimating a provisional shape of the implant which has a predetermined thickness and has a substantially predetermined shape in the thickness direction thereof using the data of the contour of the distal surface of the implant; and

deleting data of portions of the provisional shape that overlap the bone from the data of the provisional shape of the implant so that the three-dimensional data of the implant has an outer peripheral shape that is conformable with the shape of the side walls of the defect.

5. The method as claimed in claim 1, wherein the estimating step comprises the steps of:

producing data of a contour of a distal surface of the implant so that the contour is conformable with the shape of a contour of periphery of the side walls at the distal surface of the bone;

estimating a provisional shape of the implant which has a predetermined thickness and has a substantially predetermined shape in the thickness direction thereof using the data of the contour of the distal surface of the implant; and

correcting the data of the provisional shape so that the three-dimensional data of the implant has an outer peripheral shape that is conformable with the shape of the side walls of the defect by comparing the estimated data of the provisional shape of the implant with the data of the side walls of the three-dimensional image data.

6. The method as claimed in claim 1, wherein when the implant is applied to the defect of the bone, the distal surface of the implant forms a continuous surface with the distal surface of the bone.

7. The method as claimed in claim 1, wherein the bone substantially has plane symmetry, in which the estimation of the shape of the missing bone is carried out utilizing data of

a portion in the three-dimensional image data which is plane-symmetrical with the defect in the three-dimensional image data.

8. The method as claimed in claim 1, wherein the bone is a cranium bone.

9. The method as claimed in claim 1, wherein the plurality of tomographic images for producing the three-dimensional image data are taken with a predetermined slice interval between the adjacent images, in which the slice interval is in the range of 0.1 to 5mm.

10. An implant which is manufactured based on a model prepared in accordance with the modeling method as defined in any one of claims 1 to 9.

11. The implant as claimed in claim 10, wherein the implant is manufactured through a manufacturing process which comprises:

a first step for forming a layer made of material powder; and

a second step for hardening the material powder by making at least a part of the layer contact with a reaction liquid,

wherein the first step and the second step are carried

out repeatedly to obtain a laminate comprised of a plurality of the layers, thereby manufacturing an implant having a shape corresponding to the three-dimensional data of the implant provided by the modeling method.

12. The implant as claimed in claim 10, wherein the implant has a porosity of 10 to 90vol%.